(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 077 183 A1

# (12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
**21.02.2001 Bulletin 2001/08**

(51) Int. Cl.[7]: **B65D 71/50**

(21) Application number: **00306367.4**

(22) Date of filing: **26.07.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE**
Designated Extension States:
**AL LT LV MK RO SI**

(30) Priority: **17.08.1999 US 373936**

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## (54) Container carrier

(57) This invention relates to a single-piece carrier (110) for unitizing a plurality of containers (5) with a retainer sheet (115) integrated with a carrier sleeve (130). The retainer sheet (115) comprises a plurality of container receiving openings (120) for engaging a top portion of a group of containers (5) of the plurality of containers and two partial container receiving openings (125) for partially engaging a top portion of two additional containers (5) of the plurality of containers. The carrier sleeve (130) surrounds the plurality of containers (5) and a handle (150) is positioned over a center row of containers (5). A package (100) including containers (5) may comprise two layers of containers (5) within the film sleeve (130).

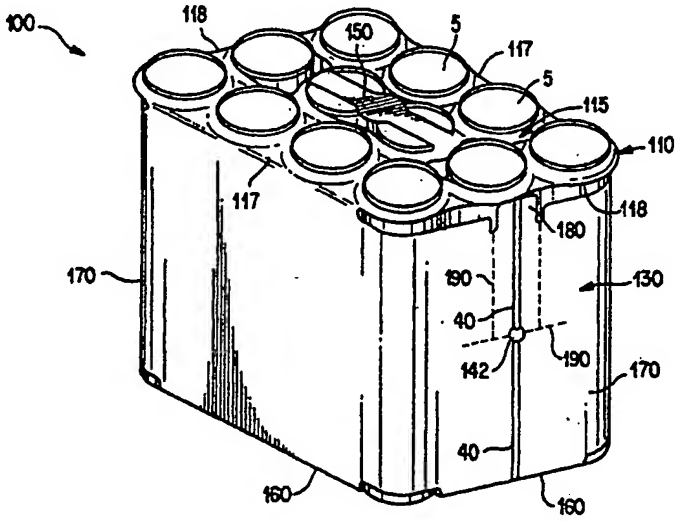


FIG. 3

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## Description

[0001] This invention relates to a single-piece carrier for unitizing a plurality of containers into a package. The carrier has a retainer sheet for engaging a top portion of the containers integrated with a film sleeve for surrounding the containers.

[0002] Conventional container carriers are often used to unitize a plurality of similarly sized containers, such as cans, bottles, jars and boxes, although other packages or containers may be unitized. Plastic ring carriers and box carriers are two such conventional container carriers.

[0003] The plastic ring carrier produces a unitized package for containers using little material. However, the plastic ring carrier, when used alone, has little or no advertising or promotional printing space. Conversely, the box carrier generally has a relatively large amount of area for promotional graphics. Disadvantageously, the box carrier requires a relatively large amount of material, may permit containers to fall out if it is not maintained in an upright position, and usually shrouds most or all of the actual containers. Therefore, there is a need for a package that incorporates the stability and economy of a ring carrier and the promotional area of a box carrier. Our earlier EP-A-1013564 describes such a carrier and carrier and package combination. The present invention is a further improvement on such carriers.

[0004] The film sleeve may be designed to create a package open at a bottom of the package or along a lower edge of the carrier. The film sleeve may further include a bottom along a portion of the lower edge of the film sleeve. Each side edge of the film sleeve is preferably bound with a seal. The carrier when formed is preferably generally symmetrical around fold lines of the carrier.

[0005] Containers are inserted within the carrier so that the containers are surrounded by between five and six sides of the package. Each container receiving opening in the retainer sheet preferably engages a container around an upper portion of the container. The rigidity and elasticity of the retainer sheet thereby supports each container.

[0006] The film sleeve is positioned around the plurality of containers, preferably in a stretching engagement with the containers. The film sleeve is preferably printed with graphics, promotional and/or other information related to contents and/or ingredients of package. Therefore, the film sleeve serves both to unitize the plurality of containers and to advertise the nature of the contents of the containers.

[0007] The carrier is preferably manufactured according to one of several preferred methods which are described in EP-A-1013564, wherein a generally continuous length of carriers is formed. In summary, a film substrate is printed with desired graphics and other merchandising information. A retainer sheet material is next joined to the film substrate by extrusion coating, laminating, profile extrusion or glueing the retainer sheet material to the film substrate. The joined retainer sheet material and film substrate are next either folded along a fold line to create a symmetrical double layer or laminated to an identical section of joined retainer sheet material and film substrate. Seams are next added by heat sealing or laminating the symmetrical double layer of retainer sheet material and film substrate together. Finally, the carrier is formed by die cutting the double layer of retainer sheet material and film substrate to ,create container receiving openings and to define a film sleeve and a retainer sheet.

[0008] A preferred embodiment in accordance with this invention will now be described with reference to the accompanying drawings; wherein:-

Fig. 1 is a top view of a carrier for holding a plurality of containers according to another preferred embodiment of this invention;

Fig. 2 shows a top view of a retainer sheet as used in the carrier shown in Fig. 1; and,

Fig. 3 is a perspective view of a package of containers, using a carrier similar to the carrier shown in Fig. 1, according to one preferred embodiment of this invention.

[0009] Figs. 1-3 show carriers 110 for carrying a plurality of containers 5. Containers 5 are preferably cans, although bottles or any other commonly unitized container 5 may be used with carrier 110 according to this invention. Containers 5 are preferably like-sized within a single carrier 110.

[0010] Carrier 10 unitizes a plurality of containers 5 to create package 1. Carrier 110 is preferably a single-piece device comprising retainer sheet 115 integrated with film sleeve 130, each preferably constructed from a flexible, resilient material such as plastic. For the purposes of this specification and claims, a sleeve is defined as a tubelike component capable of fitting over or around a plurality of containers 5.

[0011] In one preferred embodiment of this invention, retainer sheet 115 is made from low density polyethylene. Retainer sheet 115 preferably has a first thickness, such as 0.008" (0.2mm), preferably thinner than the thickness of traditional plastic ring carriers. As discussed in additional detail below, retainer sheet 115 is preferably cut, using means known to those skilled in the art such as a stamping die, to form a plurality of container receiving openings 120 in retainer sheet 115.

[0012] Retainer sheet 115 is integrated with film sleeve 30 to form a singlepiece carrier 110, as described in detail below. Film sleeve 130 preferably has a second thickness that is thinner than the first thickness of retainer sheet 115, such as 0.004" to 0.006" (0.1-0.15mm). The total thickness of retainer sheet 115 is approximately 0.012-0.014" (0.3-0.35mm) according to one preferred embodiment of this invention. Film sleeve 130 preferably exhibits greater elastic-

ity and less rigidity than retainer sheet 115. Film sleeve 130 may comprise a stretchable low density polyethylene (LDPE) film or similar material known to those having ordinary skill in the art.

**[0013]** Figs. 1-3 show a single-piece carrier for carrying a plurality of containers 5. Fig. 1 shows a top view of half of carrier 110. Carrier 110 is preferably symmetrical about handle 150 and formed using a method similar to one of those described in EP-A-1013564. Fig. 2 shows a complete view of retainer sheet 115.

**[0014]** Retainer sheet 115 is preferably constructed from low density polyethylene. However, according to this preferred embodiment, carrier sleeve 130 is preferably formed of a material having a different thickness from retainer sheet 115. As shown in Figs. 1 and 3 carrier sleeve 130 is integrally formed with respect to retainer sheet 115.

**[0015]** As shown in Fig. 2, retainer sheet 115 is formed with a plurality of container receiving openings 120 that are preferably positioned in two longitudinal rows along each longitudinal edge 117 of retainer sheet 115. As shown in Figs. 1-3, retainer sheet 115 may be formed with two longitudinal rows of four container receiving openings 120 or any alternative configuration of container receiving openings 120.

**[0016]** Handle 150 is preferably integrally formed within retainer sheet 115 between the two longitudinal rows of container receiving openings 120. Handle 150 is preferably generally flat with respect to retainer sheet 115.

**[0017]** Partial container receiving openings 125 are formed on each side of handle 150, generally along each lateral edge 118 of retainer sheet 115. Partial container receiving openings 125 are formed to engage container 5 at least along each lateral edge 118 of retainer sheet 115 to prevent the middle row of containers 5 from skewing with respect to one another in assembled package 100.

**[0018]** As discussed above, carrier sleeve 130 is integrated with retainer sheet 115, preferably along each longitudinal edge 117 of retainer sheet 115. Carrier sleeve 130 is preferably not integrated with respect to retainer sheet 115 along each lateral edge 118 of retainer sheet 115. Carrier sleeve 130 further comprises bottom panels 160 and a plurality of side panels 170. Bottom panels 160 are preferably attached with respect to each other with seam 40 or other weld to form a solid bottom.

**[0019]** According to one embodiment of this invention, pull tab 180 is positioned in carrier sleeve 130 adjacent at least one of the partial container receiving openings 125. Pull tab 180 is preferably connected with respect to tear strip 190 between pull tab 180 and a middle portion of carrier sleeve 130. Tear strip 190 is preferably formed with a line of perforations or other weakening feature formed within carrier sleeve 130.

**[0020]** One or more seams 40 are preferably formed within side panels 170. Seams 40 are primarily used to simplify construction of carrier 110, however according to one preferred embodiment of this invention, tear strips 190 are formed on either side of seam 40 to facilitate removal of containers 5 from package 100. According to one preferred embodiment of this invention, seam interrupt 142 is positioned along seam 40, preferably at an approximate midpoint of seam 40. Seam interrupt 142 is positioned along seam 40 to prevent tear strip 190 from tearing completely into a lower level of containers 5' within package 100.

**[0021]** Package 100, shown in Fig. 3, includes a plurality of containers, such as a typical multipackage size of twenty-four cans as shown in Fig. 3. Containers 5 are preferably arranged in an upper level and a lower level within carrier 110. Each container receiving opening 120 preferably engages a container 5 in the upper level of the plurality of containers 5. Each partial container receiving opening 125 preferably engages container 5 in the upper level of containers 5 around at least a portion of chime 7 of container 5. The lower level of containers 5' within carrier 110 are preferably seated on bottom panel 160 within carrier sleeve 130.

**[0022]** Handle 150 is positioned over the center longitudinal row of containers 5 and between the two longitudinal rows of containers along the longitudinal edges 117 of retainer sheet 115. Handle 150 is of suitable size, shape and thickness to support entire weight of package 100.

**[0023]** Carrier sleeve 130 is positioned around the plurality of containers 5, preferably so that each of the six sides of package 100 are shrouded with at least a portion of carrier sleeve 130 or retainer sheet 115. Carrier sleeve 130 may be printed with graphics and other promotional and/or merchandising information. Tear strip 190 and/or pull tab 180 are preferably positioned in carrier sleeve 130 for disassociating one or more containers 5 in the upper level of the plurality of containers 5 from package 100. Tear strip 190 is severed by user and preferably extends downward through carrier sleeve 130 to expose the upper level of containers 5 for removal from package 100. Preferably, the lower level of containers 5' is not released by separating tear strip 190. As shown in Fig. 3, tear strip 190 extends in a vertical direction until reaching seam interrupt 142 and then continues in a horizontal direction thereby preventing tear strip 190 from extending into the lower level of containers 5'. This is because, containers 5 may be removed from the upper level of package 10 and yet package 100 will still function to unitize the lower level of containers 5'.

## Claims

1. A single-piece carrier (110) for carrying a plurality of containers, the carrier comprising:

   a retainer sheet (115) having a plurality of container receiving openings (120) for stretchingly

engaging the plurality of containers positioned in at least three longitudinal rows, an outer longitudinal row of container receiving openings formed along each longitudinal edge of the retainer sheet (115);

a handle (150) formed within the retainer sheet (115) between the outer longitudinal rows of container receiving openings (120) and over a top portion of a centre longitudinal row of containers;

a partial container receiving opening (125) formed on each side of the handle (150) along each lateral edge of the retainer sheet, the partial container receiving opening (125) for engaging a container only along a lateral edge of retainer sheet (115);

a stretchable carrier sleeve (130) integrated with each longitudinal edge of the retainer sheet (1125) to form a single-piece carrier (110).

2. A carrier according to claim 1 wherein the carrier sleeve (130) further comprises a bottom panel (160).

3. A carrier according to claim 1 or 2, wherein the carrier (110) is symmetrically formed about the handle (150).

4. A carrier according to any one of the preceding claims, further comprising a pull tab (180) positioned in the carrier sleeve (130) adjacent at least one of the partial container receiving openings (125).

5. A carrier according to claim 4, further comprising a tear strip (190) between the pull tab (180) and a middle portion (190) of the carrier sleeve (130).

6. A carrier according to any one of the preceding claims, wherein the carrier sleeve (130) forms a plurality of side panels (170).

7. A carrier according to any one of the preceding claims, wherein a seam (40) is formed within at least one side panel (170).

8. A carrier according to claim 7, further comprising a tear (190) strip formed on each side of the seam (40).

9. A carrier according to any one of the preceding claims, wherein the handle (150) and the retainer sheet (115) are co-planar.

10. A package comprising a carrier (110) in accordance with any one of the preceding claims in combination with a plurality of containers (5), the retainer she t (115) stretchingly engaging the containers (5) and the carrier sleeve (130) surrounding the plurality of containers (5).

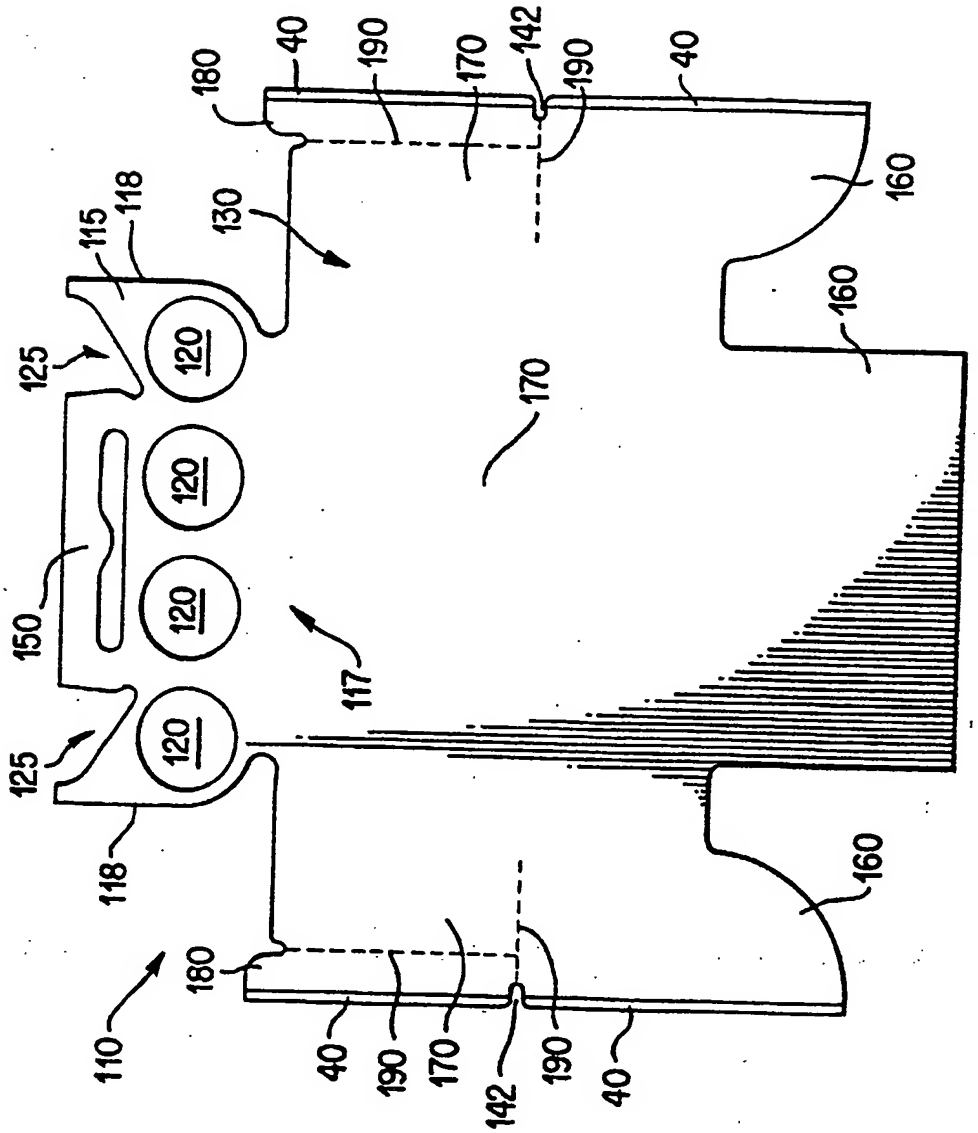
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FIG. 1

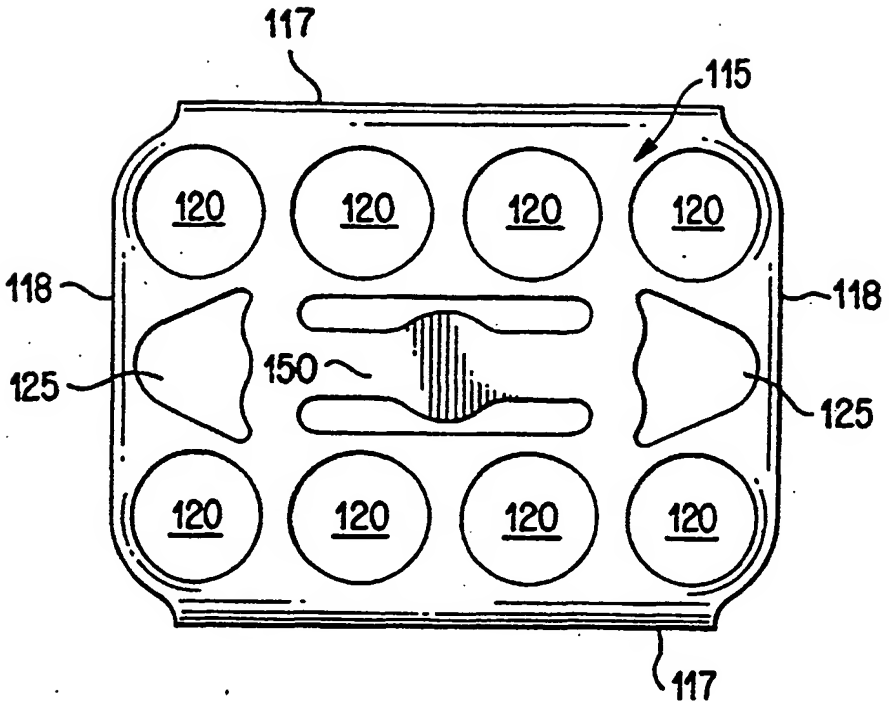


FIG. 2

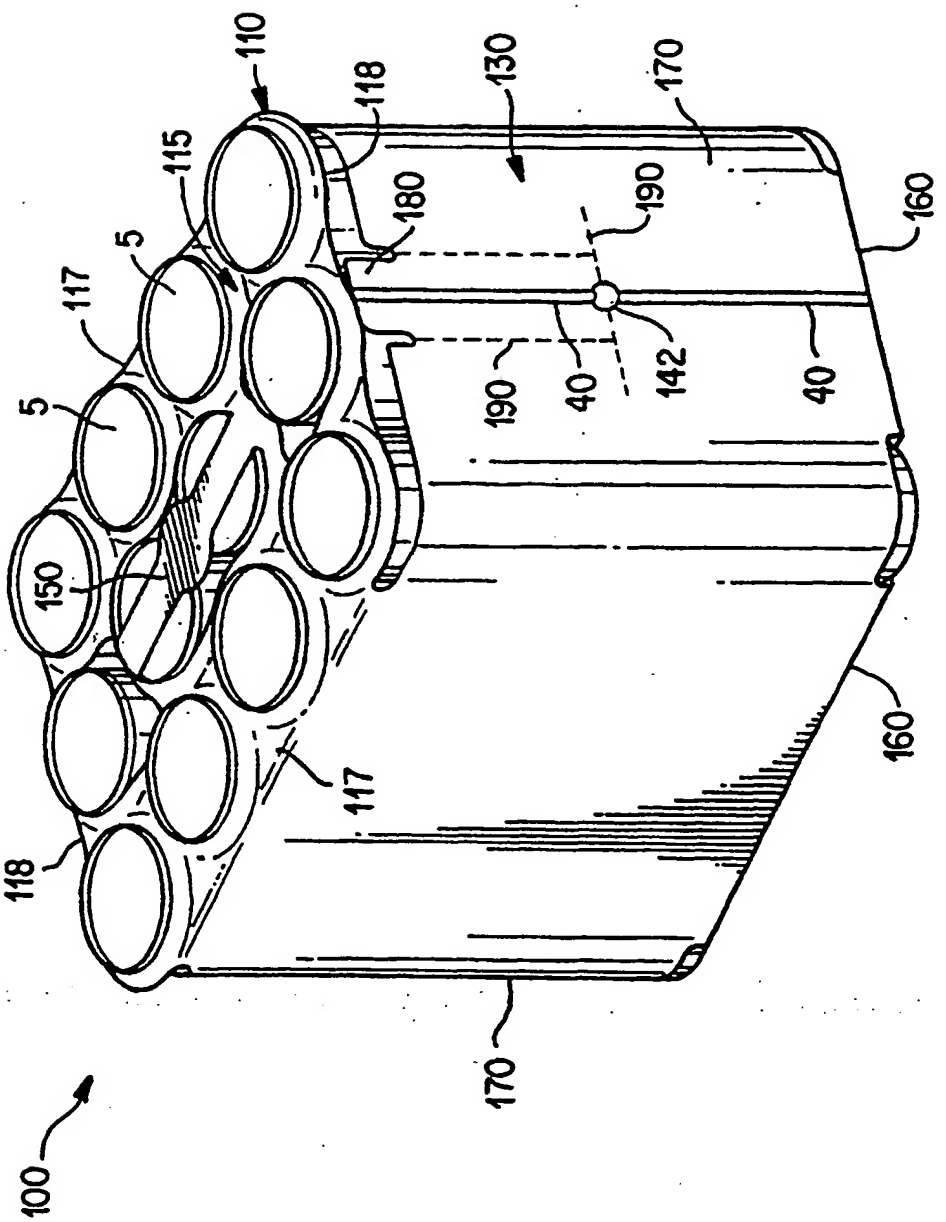
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FIG. 3

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Application Number
EP 00 30 6367

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| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| THE HAGUE | 23 November 2000 | Berrington, N |

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